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Towards an understanding of Place Forms through the lens of Social Practice Theories

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Abstract. What follow aims at contributing to the recognition of place forms from the interaction between spaces and human activities. We will discuss the use of social practice theories to frame the reality as social construction and to describe the emergence of place forms.

Keywords. place forms, social practice theories, socio-spatial systems, multilevel modeling

1. Introduction

The increasing complexity in governing the urban environment, more and more animated by the ambition of realizing an interconnected and *smart* city, calls for the replacement of the traditional notion of *eucliedean* space, based on topological relation, with the concept of relational place, emerging from the interaction between subjects and objects[1] in socio-cultural contexts. The notion of relational place comes from theories of post-structural geographers [8, 12, 14] who abandoned the search for a $well-ordered\ space$[2] and focused on the multiple and dynamic meanings of *place*, which emerge from people through their behavior. It means that places cannot be seen as *containers* but they are active drivers for actions and production of knowledge; therefore, place forms are not mere manifestation of an underlying structure, but they come into existence as a result of the complexity of human behavior also in unexpected ways. Moreover, to take into account how social relations and spatial relations intersect, combine and, sometimes, conflict, it is crucial to recognize the different viewpoints about place meanings coming from different social groups, aggregating the way subjects play power in acting. Among post-structuralist geography, the non-representational theory by Thrift [14], introduced the idea of the $performativity$ of place, addressed through spaces of embodiment. In his view, limits to representation derive from our embodiment in space (and time). Recog-

[1] The interactivity, rather than the relationship, between subjects and objects is made possible also by the existence and spreading of agentive objects in the Internet of Things paradigm

[2] Aiming at representing a well-ordered and topographical space implies to concentrate on mechanism in the euclidean spatiality, as it was for geographer influenced by structuralism i.e. Low and Urry, rather than on people and behavior

nizing embodiment implies to take into account the multiplicity of relations that connect humans both to given spaces and to other humans, and the existence of *several perspectives that count as knowledge, or more accurately knowledges* [13].

The embodiment and the idea of a meaningful environment has been developed also in the field of cognitive and ecological psychology. Gibson's notion of affordances resulted in the rejection of the dicotomy between the objective/physical and the subjective/mental worlds. The perceived environment, theorized as the different ways different individuals afford objects, may have referents located both in mind or in the environment [6]. Gibsonian affordances have enlightened the importance of experiences for attributing perceptual meanings to the environment. However, the collective, rather than individual, level of knowledge has not been considered in depth from the cognitive psychology point of view until the contribution of Baker's framework on *behavior settings*. Barker found evidences of behavioral setting's existence in the data he collected in his studies [2]; he characterized them as a function of collective actions of groups of individuals and the interdependence of actions is imposed as the primary criterion to identify a behavior setting. As a consequence of behavioral settings evidences, he suggested that the environment, independently from any individual experiences, is structured and ordered, therefore, in his view there are identifiable structures that influence behavior in a predictable way. Barker's theory of behavior settings, from the perspective of ecological psychology, fills with evidences the idea of place as a relational concept developed in post-structuralist geography, so as an entity which emerges from the interaction between objects and subjects through collective behavior. However, post-structuralists refused the idea of predictable behavior even though they recognized the importance of perceiving the environment as a first step to conceptualize places. To recognize place forms it may be helpful attempting to bridge these two disciplinary approaches, underlining the role of spatial planning and design. This is clearly valid only in the case anthropization processes of natural spaces have happened. What is not emphasized in Baker's perspective, but underlined in post structuralist view[3], is that behavior patterns can be spontaneous or directly addressed by the way spaces are planned and built. In both cases place forms or settings emerge as an entity other that subject and object [4], from the relation of the two of them; however, understanding how they emerge in relation to who are the actors performing some spatial behavior could make more evident the non neutrality of urban development in socio cultural terms and led us to predict space uses non only on the basis of physical characteristics of the perceived built environment (as in Barker's framework) but also from socio-cultural dynamics (post structuralism).

Therefore specifying the social nature of the possible behavior patterns is pivotal to recognize and contextualize place forms in the $socio-spatial$ environment. To do this we looked into social practice theories.

2. Social Practice Theories

The social reality has generally been described as placed in a continuum that goes from the individualistic view to the idea of a social totality. The individualistic view is ex-

[3] Even if they did not accept the idea of deterministic mechanisms behind structures existence, many of them reference Foucaultian idea of architecture and spatial organization as a political mean, nonetheless having in mind the possibility people react to an overimposed structure.

[4] the existence of a third entity is also mentioned in [4].

pressed by the utilitaristic perspective, where human's agency is driven by a rational concept of utility which can be generalized to represent each individuals. On the other extreme of the continuum, there are unified theories which consider the society not merely as the sum of its parts but as a social whole existing beyond them.

In between of the continuum extremes there are theorists, such as Pierre Bourdieu, Anthony Giddens and, to some extent late Michel Foucoult, who account social practices as the fundamental social phenomenon, the minimum unit to interpret the social reality. Theories of the social reality have significantly influenced the way cities are studied. Social Practice theory has added an other heuristic perspective in the study of the city introducing the social practice type of entity, which is directed at reconstructing how webs of agents coordinate themselves with their milieus [11]. This has opened up alternative perspectives to the interpretation of social order where not only patterns of behavior are meaningful but it is also crucial to recognize the certain way of understanding, wanting and feeling the performed social practice, which is shared in a social group. As Reckwitz [10] has underlined *a specific social practice contains specific forms of knowledge* which characterize the carriers of a practice. He also added that social practices are bodily performed overcoming both the idea of the distinction between mind and body and the general assumption of a norm-based behavior. Rules and principles governing the production and reproduction of a social equilibrium are not related to any social whole but to social practices themselves [10]. Here we focus particularly in understanding social practices composed by actions which take place in some location. Schatzki [11] defines different types of settings of action as medium of sociality when the lives of participants in a practice hang together by virtue of taking place within the same or different locations. He distinguished socialities in this medium into those embracing single settings (namely *commonality*) and those encompassing multiple ones (namely *orchestration*). In both cases coordinated and not coordinated set of actions are considered as constituting a social practice and settings can be organized in a specific layout of objects or not. In Tuomela [15] the core sense of a social practice is summarized as *a repeatedly performed collective social action (CSA) because of a certain shared we-attitude, where the we-attitude must be a primary reason for the repeated activity, one without which the agents would not take part in it*.

Starting from social practices theories mentioned above, we can say that actions constituting a social practice can be performed in a single or multiple localized settings in a routinized way and the agents in performing the action bring their social group identity given by a shared we attitude.

3. Conceptualizing Social Practices with a multi-level Ontological Approach: a preliminary Proposal

From an ontological perspective social practices are particularly challenging to be represented given their performative nature, that excludes the possibility of a priori categorizations, and to their dual essence as subtypes of action and as a concrete entity. An action and a social practice cannot be defined the same way since, as we have seen in the previous section, social practices have their own properties to be taken into account. Notably, a social practice is related to the way an agent is performing an action that can be ascribed to a specific social collective of agents. Therefore, instances of a class of

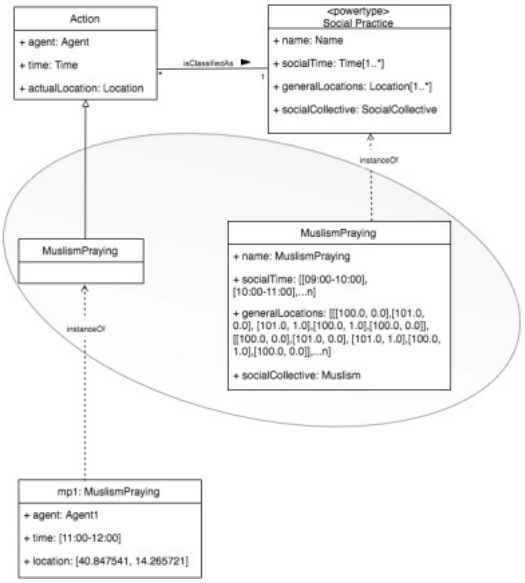

Figure 1. A powertype pattern for modeling Social Practice

social practice should refer to a particular subtype of the class of action. It is known that traditional semantics of instantiation do not allow a model element influencing anything other than its immediate instances. As a consequence, it is often necessary to replicate information at multiple levels [1]. Powertypes were introduced by Odell [9] in order to link concepts expressed in multiple levels. A powertype, indeed, is a type whose instances are subtype of another type. Powertype and subtype are thus related indirectly through the entities that are instances of the former and, at the same time, subtypes of the latter [9][5].

A common exemplification and use of powertype is related to biological species classification [1, 5, 7]. In these cases it is generally recognized the problem of treating species as concrete entities existing in time and space in order to explain their biological evolution or changes in their typical habitat [5]. Likewise, our intention is to consider a social practice as a subtype of actions, since the existence of a social practice depends on performed actions, but it has its own properties that are not the same of the action properties. For instance, the action of *running* can be subtyped by different agent's intentionality such as the *agonisticRunning* whose agent wants to compete or the *runningAsHobby*; the *agonisticRunning* as social practice instance has properties which differ from the *agonisticRunning* instance of the subtype of action, starting from who performs it, that, in the former, is a collective of agents while in the latter is an individual agent. The unification criteria to subtype the class of action indeed must be the recognition of a social collective of agents that perform the social practice (not merely participate in an action). In Figure 1 a powertype pattern, using the UML notation, for modeling social practice is shown. Social practices have different properties than actions, such as *hasSocialCollective*, *hasSocialTime* and *hasGeneralLocation*. The *hasSocialCollective*

[5] It is important to notice that powertypes in Odell do not follow the same rules than in Cardelli's definition [3] who directly derives the concept from the mathematical notion of powerset.

property is resulted from the unification criteria which allows the subtyping relation, in the example represented in Figure 1 it is the praying of *Muslims* expressing a specific way of performing the action of *praying*; the *hasSocialTime* property is referred to the temporal distribution of the action instances of the same subtype and can be seen as expression of the probability of the action, which is related to the social practice, occurence; finally, the *hasGeneralLocation* property aggregate the geographical presence of social practices of the same type. The light gray ellipse stresses the duality in conceptualizing social practices as action's subtypes and class instances. Considering social practices as powertypes raise the issue of which kind of collective entity a powertype is as it is extensively discussed in Guizzardi et al. [5]. Their approach provides an ontological interpretation of powertype as variable embodiement, rather than abstract universal or mereological sum, which exist in time, can bear modal properties and can qualitatively change while remaining numerically the same [5].

4. Conclusions

Modeling social practices is a preliminary task to shape place forms as the result of the intersection between the spatial and the social systems. In recent years, the incredible increase in numbers of applications aimed at collecting geo data, the spread of sensors in the cities and the Internet of Things gives us the opportunity to apply theories of the social world, which so far have been used as referent to qualitative research approaches, to organize, manage and analyse the information gathered. This contribution wants to be a very short survey of the theoretical perspectives on socio-spatial systems which have led us to focus on social practice theories as the way places are socially constructed. It is aimed at opening up discussions about the modeling possibilities to represent geo social phenomena from crowdsourced data on human activities in the urban environment.

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